Analysis of the Influence of Monetary Policy on Economic Growth in Indonesia

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Abstract

This study aims to analyze the influence of monetary policy on economic growth in Indonesia, quantitative research approach with multiple linear regression method, from the results of the analysis there are 2 variables that have an influence and there are 2 variables that do not have a significant influence where money circulation and exchange rates are variables that have a significant influence on the economy in Indonesia.

Keywords: **:** Indicators, GDP, Significant

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Introduction

A stable economy plays a crucial role in driving progress and improving a country's welfare. To achieve macroeconomic stability, governments generally rely on two main policies: fiscal policy and monetary policy. Monetary policy itself is a strategy implemented by a central bank or monetary authority to regulate the money supply and set interest rates to achieve specific economic targets (M. N. Natsir, 2018).

Therefore, controlling the money supply requires careful consideration of the various potential impacts. Continuously increasing money supply growth can lead to high inflation, while growth that is too slow in the long term will suppress inflation to very low levels. The view that inflation is a monetary phenomenon emphasizes that high inflation can only occur sustainably if driven by a significant increase in the money supply (Langi, 2014).

In general, measures taken by monetary authorities aim to influence a number of monetary variables, such as base money, the money supply, and interest rates. The ultimate goal of this policy is to achieve internal and external balance. Internal balance can be reflected in stable employment conditions, high economic growth, and low inflation rates. Meanwhile, external balance is usually indicated by a balanced balance of payments. Based on this description, the author intends to conduct research entitled "Analysis of the Effect of Monetary Policy on Economic Growth in Indonesia 2009–2023."

Literature Review

2.1. Theoretical Basis

The section of a study that serves to explain the relevant theories underlying the problem being studied. In the theoretical basis, researchers present existing concepts and perspectives, as well as how these theories can help explain the phenomenon being analyzed.

1. Monetary Policy Theory

Monetary policy is an important tool used by monetary observers, such as central banks, to determine the money supply and interest rates in order to achieve macroeconomic stability, such as inflation, employment-related delays, and sustainable economic growth (Mankiw, 2016). According to Mishkin (2015), there are two types of monetary policy: contractionary and expansionary. The goal of contractionary money management is to reduce inflation by reducing the money supply or lowering interest rates.

2. Gross Domestic Product (GDP)

Gross Domestic Product (GDP) is a key component used to assess a country's economic performance. GDP reflects the total value of goods and services produced in a country's economy over a period of several years, usually one year or one quarter (Mankiw, 2016). According to the Central Bureau of Statistics (BPS), GDP can be calculated based on the production, expenditure, and income approaches.

3. Money Supply

Money supply is the total amount of money in the community, both in the form of currency and demand deposits. According to Friedman and Schwartz (1963), an increase in the money supply can cause inflation, while a decrease can lead to deflation or price declines. Meanwhile, the Keynesian approach places more emphasis on public confidence in existing monetary policy. **4. Inflation**

Inflation is a persistent increase in the prices of goods and services. According to Friedman (1968), inflation occurs when the growth in the money supply exceeds the growth in

the production of goods and services. In monetary policy, Bank Indonesia uses tools such as the BI Rate to influence the inflation rate.

Research by Gordon (2005) shows that excessive inflation leads to a decrease in public purchasing power, which will reduce consumption and investment levels. Therefore, a monetary policy focused on controlling inflation is important.

5. Exchange Rates

Krugman and Obstfeld (2003) explain that exchange rates are influenced by several factors, including interest rates, inflation, and monetary policy. The Purchasing Power Parity Theory states that differences in inflation between countries impact exchange rates.

The open monetary policy implemented by Bank Indonesia through interest rate regulation and OPT (Open Market Operations) influences exchange rates in the short term. Research by Taylor (1993) shows that interest rate differentials between two countries can influence international capital flows and ultimately the exchange rate of their currencies.

Research Methodology

This study was quantitatively researched using multiple regression analysis to examine the relationship between monetary policy and economic growth. This approach allowed researchers to measure the influence of each monetary policy variable on Indonesia's economic growth using eViews software.

3.1. Data Analysis Techniques

Descriptive statistics and multiple linear regression with a simultaneous model to examine the effects of monetary policy on economic growth dynamics.

3.2. Descriptive Statistics

Descriptive statistical analysis is a method used to describe or illustrate the characteristics of collected data, according to actual conditions in the field. This approach does not aim to draw general conclusions or generalize to a broader population. According to Sugiyono (2017), descriptive statistics focuses solely on presenting data in the form of tables, graphs, diagrams, or statistical measures such as mean, median, mode, and standard deviation to provide a clear picture of the research data.

3.3. Sample Population/Data Type and Source

The population data for this proposal was obtained from secondary data on the Indonesian economy from 2009 to 2023 obtained from BI and BPS.

3.4. Data Collection Technique

The data obtained is secondary data from BI and BPS annual reports, as well as other relevant economic publications.

3.5. Linear Regression Analysis Model

A multiple regression model is used to test how several independent variables money supply (X_1), inflation (X_2), the BI rate (X_3), and the exchange rate (X_4) affect the dependent variable, economic growth (Y). The specific regression model we use is:

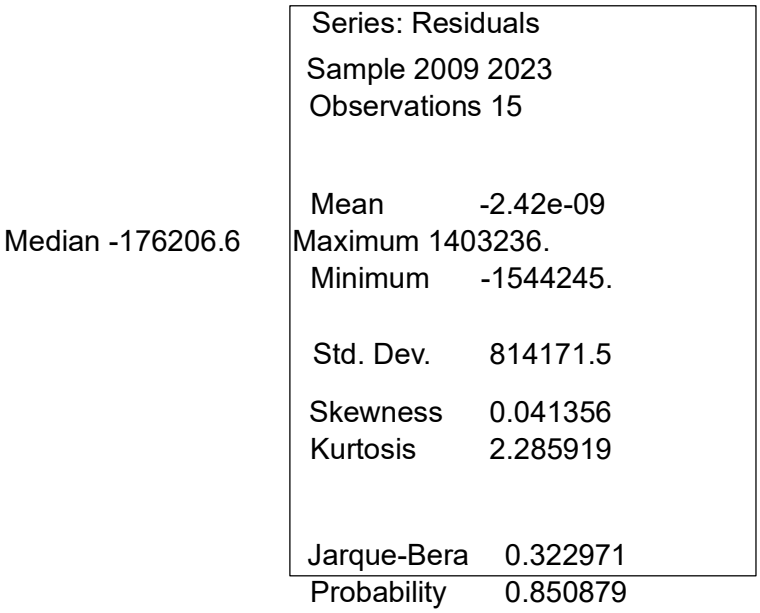
Y = C(1) + C(2)*X1 + C(3)*X2 + C(4)*X3 + C(5)*X4 Where:

Y: Economic Growth
A: Constant
B-1: Influence of money supply
B-2: Influence of inflation
B-3: Influence of the BI rate
B-4: Influence of the exchange rate
X-1: Money supply data
X-2: Inflation data
X-3: BI rate data
X-4: Exchange rate data
E: Error (residual) or model error

Results

4.1 Normality Test

Table 1. Normality Test



The normality test results showed a significance value of 0.850879, which is significantly higher than the 0.05 threshold. This indicates that the data is normally distributed and suitable for statistical analysis that requires the assumption of normality.

4.2 Multicollinearity Test

Table 1. Multicollinearity Test

Variable	Coefficient Variance	Uncentered VIF	Centered VIF
C	6.34E+12	102.4927	NA
X1	0.738091	28.08134	5.485261
X2	1.83E+10	6.371671	1.308130

X3	9.77E+10	53.26748	2.133228
X4	47666.53	128.0616	3.873882

Not affected by multicollinearity because the VIF (Variance Inflation Factors) values x1,x2,x3,x4 <10.

4.3 Heteroscedasticity Test

Table 2. Heteroscodasticity Test

Heteroskedasticity Test: Breusch-Pagan-Godfrey

F-statistic	2.018617	Prob. F(4,10)	0.1676
Obs*R-squared	6.701000	Prob. Chi-Square(4)	0.1526
Scaled explained SS	1.914876	Prob. Chi-Square(4)	0.7514

From the data results above, the Chi-Square probability value is 0.1526, which is greater than the 0.05 significance level. This indicates that the regression model is free from heteroscedasticity, meaning the error variance (residual) is constant.

4.4 Autocorrelation Test

Table 3. Autocorrelation Test

Breusch-Godfrey Serial Correlation LM Test:

F-statistic	1.384329	Prob. F(2,8)	0.3046
Obs*R-squared	3.856550	Prob. Chi-Square(2)	0.1454

Auto +	Ragu	Tidak ada autokorelasi	Ragu	Auto (-)
DW	DU	4-DU	4-DL	4
DL				
1.331297	1.7274	2.2726	2.5557	
1.4443				

When estimating the Durbin Watson value, it is affected by autocorrelation symptoms because the DW value is in the Autocorrelation + area. However, the Breusch-Godfrey Serial Correlation LM Test shows a Chi Square Prob value of 0.1454 > 0.05, meaning the data is free from autocorrelation problems.

4.5 F test (Simultaneous)

Table 4. Simultaneous Tests

F-statistic	86.30502	Durbin-Watson stat	1.331297
Prob(F-statistic)	0.000000		

From the data above, the significance figure is 0.000000, meaning that the value is clearly below the targeted significance value of 0.05. This indicates that the regression model used is able to effectively explain the dependent variable through the simultaneous contribution of these variables.

4.6 T test (Partial)

Table 5. Partial Test

Variable	Coefficient	Std. Error	t-Statistic	Prob.
C	-4365113.	2518146.	-1.733463	0.1137
X1	4.371392	0.859123	5.088205	0.0005
X2	-61072.24	135260.5	-0.451516	0.6613
X3	105397.3	312518.9	0.337251	0.7429
X4	829.0135	218.3266	3.797125	0.0035

Money supply (x1) and exchange rate (x4) have a significant effect on Y because their pvalues are (< 0.05). Conversely, inflation (x2) and BI rate (x3) do not have a significant effect on Y because their p-values are (> 0.05).

4.7 Coefficient Determination Test

An adjusted R-squared of 0.9605 means that 96.05% of the variability in the dependent variable can be explained by the independent variables in the model. The remaining 3.95% is influenced by factors outside the model.

Table 6. Coefficient Determination Test

Variable	**Coefficien t**	**Std. Error**	**t-Statistic**	**Prob.**
C	**-4365113.**	**2518146.**	**-1.733463**	**0.1137**
X1	**4.371392**	**0.859123**	**5.088205**	**0.0005**
X2	**-61072.24**	**135260.5**	**-0.451516**	**0.6613**
X3	**105397.3**	**312518.9**	**0.337251**	**0.7429**
X4	**829.0135**	**218.3266**	**3.797125**	**0.0035**

Discussion

5.1 Money Supply

Data processing revealed that the money supply had a significant impact on economic growth from 2009 to 2023. This positive effect means that if the money supply increases, economic growth will also increase during that period in Indonesia. This finding aligns with previous research by Asnawi and Hafizatul Fitria (2018), which explained that the money supply influences economic growth in Indonesia.

Theoretically, the money supply and the inflation rate influence domestic real interest rates. When real interest rates decline, investment and production activity tend to increase, which can lead to exchange rate depreciation. This depreciation makes exports more competitive, thus encouraging increased exports and increasing the country's foreign exchange reserves. Ultimately, increased foreign exchange reserves will strengthen the foundation of national economic growth.

5.2 Exchange Rate

Based on the results of multiple linear regression tests, it can be concluded that the exchange rate significantly influenced economic growth in Indonesia from 2009 to 2023. This influence is positive, meaning that if the exchange rate strengthens, Indonesia's economic growth will increase during that period. This result is consistent with previous findings by Yohana Christy Kunthi, Syafri Mandai, & Syofriza Syofyan (2023), which also revealed that the exchange rate influences Indonesia's economic growth.

In recent years, the rupiah has tended to weaken, resulting in increased prices for imported goods and services. This situation disrupts production sectors that rely on foreign raw materials and reduces people's purchasing power. Imports play a crucial role in meeting domestic demand. The weakening rupiah also makes foreign investors reluctant to invest due to increased operational costs, resulting in reduced capital inflows. If left unchecked, this could hamper development, slow economic growth, and reduce national competitiveness.

Conclusion

Based on a comprehensive analysis of the research results presented in Chapter IV, several key points can be summarized as follows:

1. Partial tests indicate a significant relationship between the money supply and economic growth. This relationship is positive, indicating that an increase in the money supply tends to accelerate economic growth.
2. Partial test results reveal that inflation has a substantial impact on economic growth, with a negative relationship. This means that an increase in the inflation rate tends to hinder or slow the rate of economic growth.
3. Partial test analysis indicates that the exchange rate plays a significant role in influencing economic growth, with a positive relationship. Therefore, an appreciation or increase in the exchange rate can contribute to increased economic growth.
4. Based on partial testing, the research model adopted in this study is proven to exist and is relevant in explaining the phenomena studied.
5. The regression results indicate a coefficient of determination (R2) of 0.9605. This figure implies that 96.5% of the variation in Indonesia's economic growth during the 20092023 period can be comprehensively explained by changes in the independent variables included in this study: money supply, inflation, interest rates (BI rate), and the exchange

rate. Meanwhile, the remaining 3.5% of the variation is explained by other factors outside the scope of the estimated model.

6. The Classical Assumption Test confirmed that there were no significant violations of the classical assumptions in this research model, demonstrating the validity and reliability of the results obtained. Based on these research findings, the researcher further provides the following recommendations:

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